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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,088	10/29/2003	Sheau-Hwa Ma	FA1062USNA	6645
23906	7590	10/07/2005	EXAMINER	
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805			SASTRI, SATYA B	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/696,088

Applicant(s)

MA ET AL.

Examiner

Satya B. Sastri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/29/04, 8/16/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

1. This office action is in response to application filed on October 29, 2003. *Claims 1-26* are now pending in the application.

### *Claim Objections*

2. Claim numbering is objected to as two different claims are numbered as *claim 25*.

*Claim 9* is objected to for including (meth)acrylate in line 2 of the claim. It is unclear as to what alkyl group it refers to.

### *Double Patenting*

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground.

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. *Claims 25, 26* are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 20 of copending Application No. 10/696,093 (published as US 2004/0115357 A1). Although the conflicting claims are not identical, they are not patentably distinct from each other because the scope of the instant claims encompasses the scope of the copending claims.

5. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned 10/696,093, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

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A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

***Claim Rejections - 35 USC § 102 and 103***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. ***Claims 1-11, 13-16, 18, 19, 21-23, 25, 26*** are rejected under 35 U.S.C. 102(b) as anticipated by Barsotti (US 4,411,951).

Prior art to Barsotti discloses a coating composition for automobiles containing 40-60% by weight of a binder and 30-60% by weight of a non-aqueous carrier, the binder resin containing reactive functional groups and an alkylated melamine formaldehyde crosslinking resin, in addition the compositions contains about 0.1 to 10% by weight of the binder resin, of a rheology control additive based on colloidal silica and polyethylene glycol (abstract, column 3,

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lines 20-28). The rheology control additive in turn contains 0.5-20% by weight of polyethylene glycol and the remainder is colloidal silica (column 2, lines 5-54). The binder of the composition is preferably an acrylic polymer having carboxyl, hydroxyl, amide, glycidyl groups or a mixture of these groups with a molecular weight in the range of 500-30,000, and a melamine crosslinking agent. The compositions contain about 0.1 to 2% by wt. based on the wt. of the binder, of an acid catalyst (column 3, lines 11-18). Disclosed acrylic monomers include alkyl (meth)acrylate, hydroxylalkyl (meth)acrylate, styrene, (meth)acrylic acid etc. The hydroxyl content of the acrylic polymer may range from 2-10% by wt. while the ethylenically unsaturated carboxylic monomer content may range from 0.1 to 5% by wt. (column 3, lines 29-49). The styrene content may be used in amounts of 0.1 to 30% by wt. The molecular wt. ranges from 500-30,000 and the Tg from -20°C to +25°C (column 4, lines 4-16). Typical solvents for the acrylic polymer are toluene, MEK, ethanol etc. (column 4, lines 45-54).

The film forming binder resin may contain a medium molecular wt. acrylic polymer with a molecular wt. in the range of 5,000-20,000 and a low molecular weight acrylic polymer having an average molecular weight of 500-7,500 (column 5, lines 15-46) and having a composition 10-20% by wt. of styrene 10-20% of methyl methacrylate, 35-48% of butyl acrylate, 20-30% by wt. of hydroxyethyl acrylate and 0.1 to 5% by wt. of acrylic acid (column 5, lines 59-68 and column 6, lines 1-8). The compositions may additionally comprise pigments or metallic flake pigments in amounts of 0.1-5% by wt. of the coating composition. The pigments may be dispersed with the binder resin or polymeric dispersants that are compatible with the binder resin (column 6, lines 9-32). The coating composition may be used on a variety of substrates including metal, plastics, wood and glass and baked at about 65-140°C for about 15

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min. An embodiment discloses the coating composition as clear coat/color coat finish for substrates. Working example 1 discloses a composition comprising acrylic resin, colloidal silica and melamine resin. Thus, *claims 1-11, 13-16, 18, 19, 21-23, 25, 26* are anticipated by the prior art.

9. *Claims 20, 24* are rejected under 35 U.S.C. 103(a) as being unpatentable over Barsotti (US 4,411,951) is view of Loney Crawford (US 5,612,415).

Prior art to Barsotti et al. is elaborated above in paragraph 8 and is incorporated herein by reference.

The difference between the prior art and the instant invention is that the prior art does not disclose the coating composition formulated as a two-pack composition.

The prior art discloses the use of an acrylic binder with reactive function groups that can be utilized in a crosslinking reaction with melamine crosslinking agent. With regard to formulating the composition as a two-pack composition, it is the examiner's position crosslinkable compositions may be formulated as one-pack or two-pack compositions depending upon the reactivity of the individual components and that that keeping two reactive components in a spatially separate environment is well within the capabilities of one of ordinary skill in the art. For instance, the secondary reference discloses that automotive coatings may be one-component or two-component depending upon the reactivity of the components (column 1, lines 50-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to formulation the prior art composition to Barsotti as a two pack composition and thereby obtain the instant invention.

With regard to *claim 24* that concerns the amount of acrylic polymer in the crosslinkable component, it is the examiner's position that the amount of crosslinkable component in the composition is a result effective variable because changing it will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). In view of this, it would have been obvious to one of ordinary skill in the art to utilize appropriately effective amount of acrylic polymer including those within the scope of the present claims so as to produce desired end results.

10. *Claim 12 is* rejected under 35 U.S.C. 103(a) as being unpatentable over Barsotti (US 4,411,951) in view of Bederke et al. (US 5,473,032).

Prior art to Barsotti et al. is elaborated above in paragraph 8 and is incorporated herein by reference.

The difference between the prior art and the instant invention is that the prior art does not disclose the coating compositions with polyisocyanate as the crosslinking agent.

The secondary reference to Bederke et al. is in an analogous field of coating compositions for automotive components. The secondary reference discloses the use of crosslinking agents based on melamine or polyisocyanates so as to produce thermosetting resins. Amino resins such as melamine resin may be used such that the relative proportion of the (meth)acrylic copolymer to amino resin, as solids, ranges from 80:20 to 60:40. The proportion of polyisocyanate crosslinking agents is chosen in such a way that 0.5 to 1.5 isocyanate groups are allotted to a hydroxyl group if the (meth)acrylic copolymer (column 4, lines 45-67, column 5,



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lines 1-25). Given the functional equivalence of melamine and polyisocyanate crosslinking agents for functional group-containing (meth)acrylic copolymers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include polyisocyanate crosslinking agent in the compositions of Barsotti et al. and thereby obtain the instant invention.

11. *Claims 1, 4-11, 13-16, 18, 19, 21-26* are rejected under 35 U.S.C. 102(b) as anticipated by Briggs et al. (US 5,360,644).

Briggs et al. disclose a coated article comprising a substrate having thereon, a color-plus-clear coating wherein the color layer is derived from a polymer containing active hydrogen groups thereon, an aminoplast curing agent, an acid cure catalyst and an amine (abstract). The acrylic polymer may be derived from methyl methacrylate, methyl acrylate, (meth)acrylic acid, butyl methacrylate etc. An active hydrogen-containing group may be derived from hydroxyl functional acrylic monomers (column 2, lines 6-64). The coating compositions include aminoplast resin and cure catalysts (column 3, lines 30-55). The compositions may also include one or more organic or inorganic pigments, metallic and flake materials and other materials known in the art (column 4, lines 18-28).

With regard to the amount of fumed silica, the prior art further discloses that the compositions may include small amounts of rheology control agents, such as acrylic microgels, fumed silica, cellulose etc in amounts less than 10% by wt., based on the total solid wt. of reactants, usually not exceeding 1 or 2% by wt. Working example in column 8 for the preparation of uncatalyzed basecoat composition is disclosed to contain an acrylic resin with 7% by wt., based on the total wt. of acid functional acrylic polymer, of acrylic acid, melamine resin

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and fumed silica dispersed in acrylic resin. Claims 16, 18 read on the working example in column 9 that discloses two different acid containing acrylic polymers with fumed silica dispersion and melamine crosslinking agent. The solvent in the composition may range from 0.01 to 99 wt.%. The compositions may be used for topcoats on automobile surfaces and crosslinked at temperatures of 60 to 177°C (column 7, lines 6-10, 46-47, 63-67). The compositions in column 8 are further blended with an acid catalyst to 55% non-volatile content (lines 39-40). Thus, *claims 1, 4-11, 13-16, 18, 19, 21-26* are anticipated by the prior art.

12. *Claims 2, 3* are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Briggs et al. (US 5,360,644).

Prior art to Briggs et al. is elaborated above in paragraph 11 and is incorporated herein by reference. The prior art does not explicitly disclose the molecular weight and glass transition temperature of the acrylic copolymer. Given that the instantly claimed ranges are broad and the acrylic polymers of prior art comprise the acid comonomer within the instantly claimed range, a reasonable basis exists to believe that the molecular weight and the glass transition temperatures are inherently present in the prior art copolymers. It is well settled that when a claimed product reasonably appears to be substantially the same as a product disclosed in the prior art, the burden of proof is on the applicants to prove that the prior art product does not inherently or necessarily possess the characteristics attributed to the claimed product. See *In re Spada* 15 USPQ 2d 1655 (CAFC 1990).

13. *Claims 1-9, 11-16, 18, 19, 21-26* are rejected under 35 U.S.C. 102(b) as anticipated by Bederke et al. (US 5,473,032).

Bederke et al. disclose coating compositions comprising acrylic copolymers having hydroxyl groups, several solvents, optionally, water, special-effect pigments and/or coloring pigments and conventional additives, whereby the acrylic copolymer comprises 0.6-7.5% by wt., based on the total wt. of the copolymer, of (meth)acrylic acid, 10-30% by wt. hydroxylalkyl esters of (meth)acrylic acid and other comonomers (abstract, column 1, lines 26-60). A variety of useful monomers are disclosed in columns 3-4. The crosslinking agents may be based on melamine or polyisocyanates so as to produce thermosetting resins. Amino resins such as melamine resin may be used such that the relative proportion of the (meth)acrylic copolymer to amino resin, as solids, ranges from 80:20 to 60:40. The proportion of polyisocyanate crosslinking agents is chosen in such a way that 0.5 to 1.5 isocyanate groups are allotted to a hydroxyl group of the (meth)acrylic copolymer (column 4, lines 45-67, column 5, lines 1-25). The basecoats may additionally include flow control agents such as (meth)acrylic homopolymers, anti settling agents such as pyrogenic silicon dioxide, accelerators for the crosslinking reaction, acids etc. Working example 3 discloses the acrylic copolymer comprising acrylic acid, amine crosslinking agent and highly dispersed silicon dioxide within the claimed range. The molecular weight and glass transition temperatures of the (meth)acrylic copolymer is in the range of 5,000-30,000 and -10°C to +80°C (column 10, claims 1, 2). Thus, *claims 1-9, 11-16, 18, 19, 21-26* are anticipated by the prior art.

14. *Claim 20* is rejected under 35 U.S.C. 103(a) as being unpatentable over Briggs et al. (US 5,360,644) or Bederke et al. (US 5,473,032) individually, in view of Loney Crawford (US 5,612,415).

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Prior art to Briggs et al. and Bederke et al. are elaborated above in paragraphs 11, 13, respectively, and are incorporated herein by reference.

The difference between the prior art and the instant invention is that the prior art does not disclose the coating composition formulated as a two-pack composition.

The prior art discloses the use of an acrylic binder with reactive function groups that can be utilized in a crosslinking reaction with melamine crosslinking agent. With regard to formulating the composition as a two-pack composition, it is the examiner's position crosslinkable compositions may be formulated as one-pack or two-pack compositions depending upon the reactivity of the individual components and that that keeping two reactive components in a spatially separate environment is well within the capabilities of one of ordinary skill in the art. For instance, the secondary reference discloses that automotive coatings may be one-component or two-component depending upon the reactivity of the components (column 1, lines 50-57). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to formulate the prior art composition to Briggs et al. or Bederke et al. as a two pack compositions and thereby obtain the instant invention.

15. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Strauss et al. (US 5,340,868) or Briggs et al. (US 5,360,644) or Bederke et al. (US 5,473,032) individually, in view of in view of Barsotti et al. (US 6,221,494 B1).

Prior art to Barsotti et al., Briggs et al. and Bederke et al. are elaborated above in paragraphs 8, 11, 13, respectively and are incorporated herein by reference.

The difference between the prior art and the instant invention is that the prior art does not disclose the use of reactive oligomers in the coating composition.

Secondary reference to Barsotti et al. discloses reactive oligomers suitable for use in a two pack curable coating composition. The hydroxyl-containing oligomeric component may be added to an acrylic copolymer derived from styrene, alkyl (meth)acrylate, ethylenically unsaturated acids etc. (column 4, lines 49-67, column 5). The reactive oligomers are suitable for use in automotive paint compositions and provide for low VOC and fast cure rates under ambient conditions (column 1, lines 30-51). In light of such benefits, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include reactive oligomers in the coating compositions disclosed by Barsotti et al. or Briggs et al. or Bederke et al. and thereby obtain the instant invention.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,524,173 to Rehfuss et al. cited as an X reference in the International Search Report discloses compositions based on an acrylic copolymer comprising up to 2% by wt. of acid comonomer and discloses a working example (III) wherein composition comprises amorphous silica outside of the claimed range.

### ***Conclusion***

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SATYA SASTRI

September 20, 2005



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